

AMENDMENTS TO THE CLAIMS

1-40. (canceled)

41. (original) A magnetic random access memory structure comprising:
a longitudinally extending planarized conductive line formed within an insulating layer;

an electroplated bottom sense layer over said conductive line;

a nonmagnetic tunnel barrier layer over said sense layer;

a pinned layer over said nonmagnetic layer; and

at least one electrical conductor in contact with said pinned layer.

42. (original) The structure of claim 41 wherein said sense layer is formed of NiFe.

43. (original) The structure of claim 41 wherein said insulating layer is selected from the group consisting of BPSG, SiO, SiO₂, Si₃N₄ and polyimide.

44. (original) The structure of claim 41 wherein said nonmagnetic layer is aluminum oxide.

45. (currently amended) The structure of claim 41 wherein said sense layer is ~~formed of plurality of layers to produce~~ a ferromagnetic sense layer.

46. (original) The structure of claim 41 wherein said pinned layer is formed of a plurality of layers to produce a ferromagnetic pinned layer.

47. (original) A processor-based system, comprising:

a processor; and

an integrated circuit coupled to said processor, said integrated circuit including a plurality of magnetic random access memory cells, each of said magnetic random access memory cells including an electroplated bottom sense layer formed over a planarized conductor, a nonmagnetic layer formed over said sense layer and a pinned layer formed over said nonmagnetic layer.

48. (original) The system of claim 47 wherein said sense layer is formed of NiFe.

49. (original) The system of claim 47 wherein said nonmagnetic layer is aluminum oxide.

50. (currently amended) The system of claim 47 wherein said sense layer is ~~formed of plurality of layers to produce~~ a ferromagnetic sense layer.

51. (original) The system of claim 47 wherein said pinned layer is formed of a plurality of layers to produce a ferromagnetic pinned layer.

52. (new) The structure of claim 41, wherein the bottom sense layer is formed in openings made in a dielectric layer.

53. (new) The structure of claim 52, wherein the openings are trenches and the bottom sense layer extends longitudinally over the conductive line.

54. (new) The structure of claim 52, wherein the dielectric layer has a thickness greater than a thickness of the bottom sense layer.

55. (new) A magnetic random access memory structure comprising:
a longitudinally extending planarized conductive line formed within an insulating layer;

an electroplated ferromagnetic layer over said conductive line;

a nonmagnetic tunnel barrier layer over said patterned bottom layer;

an upper ferromagnetic over said nonmagnetic layer; and

at least one electrical conductor in contact with said upper layer.

56. (new) The structure of claim 55 wherein said bottom layer is formed of NiFe.

57. (new) The structure of claim 55 wherein said insulating layer is selected from the group consisting of BPSG, SiO, SiO₂, Si₃N₄ and polyimide.

58. (new) The structure of claim 55 wherein said nonmagnetic layer is aluminum oxide.

59. (new) The structure of claim 55 wherein said bottom layer is a ferromagnetic sense layer.

60. (new) The structure of claim 55, wherein said upper layer is formed of a plurality of layers to produce a ferromagnetic pinned layer.